

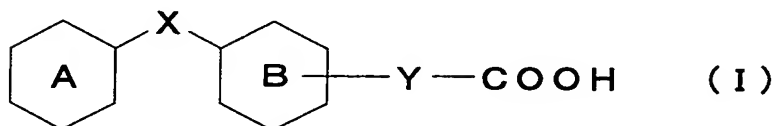
## CLAIMS

1. An agent for regulating 14273 receptor function comprising a compound having an aromatic ring and a group  
5 .capable of releasing a cation.

2. The agent according to claim 1, wherein the compound is a carboxylic acid containing two or more aromatic rings, or a derivative thereof.

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3. The agent according to claim 1, wherein the compound is represented by the formula:

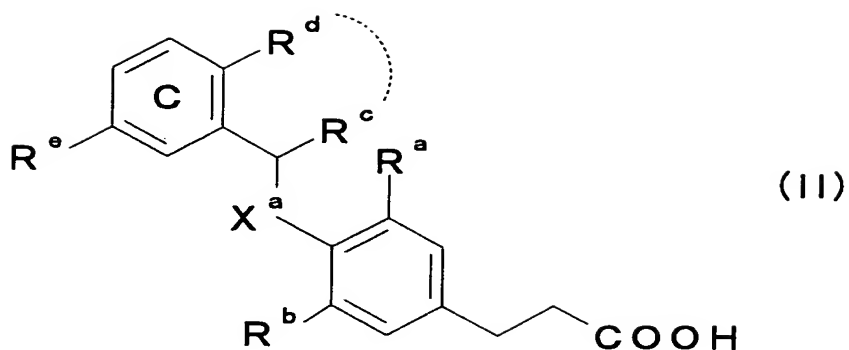


wherein ring A is an aromatic ring optionally having  
15 substituent(s); ring B is an aromatic ring optionally having substituent(s) in addition to -Y-COOH; X and Y are each a spacer; and -Y-COOH is substituted at any position on ring B, or a salt thereof or a prodrug thereof.

20 4. An agent for preventing or treating diabetes mellitus, hyperlipidemia, obesity or anorexia, comprising a 14273 receptor function regulating drug having an aromatic ring and a group capable of releasing a cation.

25 5. An agent for regulating stress comprising a compound having an aromatic ring and a group capable of releasing a cation.

6. A compound represented by the formula:



wherein  $R^a$  is a hydrogen atom, a fluorine atom, a chlorine atom, a hydrocarbon group optionally having substituent(s), a heterocyclic group optionally having substituent(s), a hydroxy group optionally having substituent(s), a carboxyl group optionally having substituent(s), an acyl group, or an amino group optionally having substituent(s);

$R^b$  is a hydrogen atom, a fluorine atom, a chlorine atom, a hydrocarbon group optionally having substituent(s), a heterocyclic group optionally having substituent(s), a hydroxy group optionally having substituent(s), a carboxyl group optionally having substituent(s), an acyl group, or an amino group optionally having substituent(s),

with the proviso that when one of  $R^a$  and  $R^b$  is a hydrogen atom, then the other should not be a hydrogen atom;

$R^c$  is a hydrogen atom, a hydrocarbon group optionally having substituent(s), or a heterocyclic group optionally having substituent(s);

$R^d$  is a hydrogen atom, a fluorine atom, a chlorine atom, a hydrocarbon group optionally having substituent(s), a heterocyclic group optionally having substituent(s), a hydroxy group optionally having substituent(s), a carboxyl group optionally having substituent(s), an acyl group, or an amino group optionally having substituent(s),

or  $R^c$  and  $R^d$  are optionally bonded to each other to form a ring optionally having substituent(s);

$R^e$  is a hydrogen atom, a fluorine atom, a chlorine atom, a hydrocarbon group optionally having substituent(s), a heterocyclic group optionally having substituent(s), a hydroxy

group optionally having substituent(s), a carboxyl group optionally having substituent(s), an acyl group, or an amino group optionally having substituent(s),

with the proviso that when one of  $R^d$  and  $R^e$  is a hydrogen atom, then the other should not be a hydrogen atom;

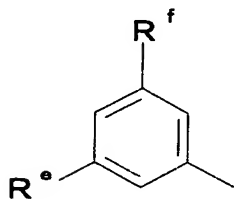
$X^a$  is an oxygen atom, or a methylene group optionally having substituent(s); and

ring C is a benzene ring optionally having further substituent(s),

or a salt thereof, except

(i) 3,5-difluoro-4-[(2,3-dihydro-1H-inden-1-yl)oxy]benzenepropanoic acid, (ii) 3-chloro-4-[(2,3-dihydro-1H-inden-1-yl)oxy]benzenepropanoic acid, (iii) 4-([1,1'-biphenyl]-3-ylmethoxy)-3-chlorobenzenepropanoic acid, (iv) 4-[(4,5-dimethoxy-2-nitrophenyl)methoxy]-3-methoxybenzenepropanoic acid, and (v) 4-[3-hydroxy-1-(4-hydroxy-3-methoxyphenyl)-2-(2-methoxyphenoxy)propoxy]-3-methoxybenzenepropanoic acid.

7. The compound according to claim 6, wherein ring C is a benzene ring represented by the formula:



wherein  $R^f$  is a hydrocarbon group optionally having substituent(s), or a hydroxy group optionally having substituent(s); and  $R^e$  is a hydroxy group optionally having substituent(s).

8. The compound according to claim 6, wherein

$R^d$  and  $R^e$  are each a hydrogen atom, a fluorine atom, a chlorine atom, an alkyl group optionally having substituent(s) free of a benzene ring, an alkenyl group optionally having

substituent(s) free of a benzene ring, an alkynyl group optionally having substituent(s) free of a benzene ring, a cycloalkyl group optionally having substituent(s) free of a benzene ring, a heterocyclic group optionally having  
 5 substituent(s) free of a benzene ring, an alkoxy group optionally having substituent(s) free of a benzene ring, a heterocycloxy group optionally having substituent(s) free of a benzene ring, a carboxyl group optionally having substituent(s) free of a benzene ring, an acyl group free of a  
 10 benzene ring, or an amino group optionally having substituent(s) free of a benzene ring;

when one of  $R^d$  and  $R^e$  is a hydrogen atom, then the other should not be a hydrogen atom; and

ring C is a benzene ring optionally having further  
 15 substituent(s) free of a benzene ring.

9. The compound according to claim 6, wherein  
 at least one of  $R^a$  and  $R^b$  is a fluorine atom, a chlorine atom, or an alkoxy group optionally having substituent(s);

20  $R^c$  is a hydrogen atom;

$R^d$  and  $R^e$  are each a hydrogen atom, or an alkoxy group optionally having substituent(s) free of a benzene ring;

when one of  $R^d$  and  $R^e$  is a hydrogen atom, then the other should not be a hydrogen atom;

25  $X^a$  is an oxygen atom; and

ring C is a benzene ring optionally having substituent(s) free of a benzene ring.

10. The compound according to claim 6, wherein at least one  
 30 of  $R^a$  and  $R^b$  is a fluorine atom, a chlorine atom, a  $C_{1-6}$  alkyl group, or a  $C_{1-6}$  alkoxy group;  $R^c$  is a hydrogen atom;  $X^a$  is an oxygen atom;  $R^d$  is a hydrogen atom; and  $R^e$  is a  $C_{6-14}$  aryloxy group optionally having substituent(s).

35 11. The compound according to claim 6, wherein

$R^a$  is a fluorine atom, a chlorine atom, or a  $C_{1-6}$  alkoxy group;

$R^b$  is a hydrogen atom, or a fluorine atom;

$R^c$  is a hydrogen atom, or a  $C_{1-6}$  alkyl group;

5  $X^a$  is an oxygen atom;

ring C is a benzene ring optionally having, in addition to  $R^d$  and  $R^e$ , further substituent(s) selected from the group consisting of (i) a  $C_{1-6}$  alkyl group, (ii) a hydroxy group, (iii) a  $C_{1-6}$  alkoxy group optionally having substituent(s) selected from the group consisting of hydroxy, amino,  $C_{1-6}$  alkoxy-carbonyl-amino, carboxy,  $C_{1-6}$  alkoxy-carbonyl, carbamoyl, mono- $C_{1-6}$  alkyl-carbamoyl, di- $C_{1-6}$  alkyl-carbamoyl, tri- $C_{1-6}$  alkylsilyloxy, and a 5- to 7-membered heterocyclic group containing, in addition to carbon atom(s), 1 to 4 heteroatoms of one or two kinds selected from a nitrogen atom, a sulfur atom and an oxygen atom, (iv) a  $C_{6-14}$  aryloxy group, and (v) a  $C_{7-16}$  aralkyloxy group; and

(1) when  $R^d$  is a hydrogen atom,

then  $R^e$  should be (i) a hydroxy group, (ii) a  $C_{1-6}$  alkoxy group optionally having substituent(s) selected from the group consisting of  $C_{1-6}$  alkoxy, carboxy,  $C_{1-6}$  alkoxy-carbonyl,  $C_{1-6}$  alkyl-carbonyl, carbamoyl, mono- $C_{1-6}$  alkyl-carbamoyl and di- $C_{1-6}$  alkyl-carbamoyl, (iii) a  $C_{2-6}$  alkynyloxy group, (iv) a  $C_{3-7}$  cycloalkyloxy group, (v) a  $C_{6-14}$  aryloxy group optionally having substituent(s) selected from the group consisting of a halogen atom,  $C_{1-6}$  alkyl,  $C_{1-6}$  alkoxy and  $C_{1-6}$  alkyl-carbonyl, or (vi) a 5- to 10-membered heterocyclyl-oxy group containing, in addition to carbon atom(s), 1 to 4 heteroatoms of one or two kinds selected from a nitrogen atom, a sulfur atom and an oxygen atom;

(2) when  $R^e$  is a hydrogen atom,

then  $R^d$  should be (i) a  $C_{1-6}$  alkyl group, (ii) a  $C_{6-14}$  aryl group, (iii) a  $C_{1-6}$  alkoxy group optionally having substituent(s) with a 5- to 7-membered heterocyclic group containing, in addition to carbon atom(s), 1 to 4 heteroatoms

of one or two kinds selected from a nitrogen atom, a sulfur atom and an oxygen atom, (iv) a C<sub>3-7</sub> cycloalkyloxy group, (v) a C<sub>6-14</sub> aryloxy group optionally having substituent(s) selected from the group consisting of a halogen atom and optionally  
 5 halogenated C<sub>1-6</sub> alkyl, (vi) a C<sub>7-16</sub> aralkyloxy group, or (vii) a 5- to 7-membered heterocyclic group containing, in addition to carbon atom(s), 1 to 4 heteroatoms of one or two kinds selected from a nitrogen atom, a sulfur atom and an oxygen atom.

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12. The compound according to claim 6, wherein

R<sup>a</sup> is a fluorine atom, a chlorine atom, or a C<sub>1-6</sub> alkoxy group;

R<sup>b</sup> is a hydrogen atom or a fluorine atom;

15 R<sup>c</sup> is a hydrogen atom;

R<sup>d</sup> is a hydrogen atom, or a C<sub>6-14</sub> aryl group;

R<sup>e</sup> is a hydrogen atom, a C<sub>1-6</sub> alkoxy group, or a C<sub>6-14</sub> aryloxy group;

when one of R<sup>d</sup> and R<sup>e</sup> is a hydrogen atom, then the other  
 20 should not be a hydrogen atom;

X<sup>a</sup> is an oxygen atom; and

ring C is a benzene ring having no substituent other than R<sup>d</sup> and R<sup>e</sup>.

25 13. The compound according to claim 7, wherein R<sup>f</sup> is (i) a C<sub>1-6</sub> alkyl group, (ii) a hydroxy group, (iii) a C<sub>1-6</sub> alkoxy group optionally having substituent(s) selected from the group consisting of hydroxy, amino, C<sub>1-6</sub> alkoxy-carbonyl-amino, carboxy, C<sub>1-6</sub> alkoxy-carbonyl, carbamoyl, mono-C<sub>1-6</sub> alkyl-  
 30 carbamoyl, di-C<sub>1-6</sub> alkyl-carbamoyl, tri-C<sub>1-6</sub> alkylsilyloxy, and a 5- to 7-membered heterocyclic group containing, in addition to carbon atom(s), 1 to 4 heteroatoms of one or two kinds selected from a nitrogen atom, a sulfur atom and an oxygen atom, (iv) a C<sub>6-14</sub> aryloxy group, or (v) a C<sub>7-16</sub> aralkyloxy  
 35 group; and

R<sup>e</sup> is a C<sub>1-6</sub> alkoxy group, or a C<sub>6-14</sub> aryloxy group.

14. 3,5-Difluoro-4-[(3-phenoxyphenyl)methoxy]-  
benzenepropanoic acid, or 3-fluoro-4-[(3-  
5 phenoxyphenyl)methoxy]benzenepropanoic acid, or a salt thereof.

15. 3-(4-{[3-(4-Chlorophenoxy)benzyl]oxy}-3,5-  
difluorophenyl)propanoic acid, 3-(3,5-difluoro-4-{[3-(4-  
fluorophenoxy)benzyl]oxy}phenyl)propanoic acid, 3-(3,5-  
10 difluoro-4-{[3-(4-methylphenoxy)benzyl]oxy}phenyl)propanoic  
acid, 3-(3-fluoro-4-{[3-(2-fluorophenoxy)benzyl]oxy}phenyl)-  
propanoic acid, 3-(3-fluoro-4-{[3-(3-fluorophenoxy)benzyl]-  
oxy}phenyl)propanoic acid, 3-(3-fluoro-4-{[3-(4-  
fluorophenoxy)benzyl]oxy}phenyl)propanoic acid, 3-(3-fluoro-4-  
15 {[3-(4-chlorophenoxy)benzyl]oxy}phenyl)propanoic acid, 3-(3-  
fluoro-4-{[3-(4-methylphenoxy)benzyl]oxy}phenyl)propanoic acid,  
3-{3-methyl-4-[(3-phenoxybenzyl)oxy]phenyl}propanoic acid, or  
3-(4-{[3-(4-fluorophenoxy)benzyl]oxy}-3-methylphenyl)propanoic  
acid, or a salt thereof.

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16. A prodrug of the compound according to claim 6, except  
ethyl 4[(2,4-dichlorophenyl)methoxy]-3-  
methoxybenzenepropanoate.

25 17. The prodrug according to claim 16, which is an ester  
form of the carboxylic acid.

18. A pharmaceutical agent comprising the compound according  
to claim 6, or a salt thereof, or a prodrug thereof.

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19. A method of regulating the function of 14273 receptor,  
comprising administering, to a mammal, an effective amount of  
a compound having an aromatic ring and a group capable of  
releasing a cation.

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20. A method of preventing or treating diabetes mellitus, hyperlipidemia, obesity or anorexia, comprising regulating the function of 14273 receptor by administering, to a mammal, an effective amount of a compound having an aromatic ring and a group capable of releasing a cation.

21. A method of regulating stress, comprising administering, to a mammal, an effective amount of a compound having an aromatic ring and a group capable of releasing a cation.

22. Use of a compound having an aromatic ring and a group capable of releasing a cation, for the production of an agent for regulating 14723 receptor function.

23. Use of a 14273 receptor function regulating drug having an aromatic ring and a group capable of releasing a cation, for the production of an agent for the prevention or treatment of diabetes mellitus, hyperlipidemia, obesity or anorexia.

24. Use of a compound having an aromatic ring and a group capable of releasing a cation, for the production of a stress regulating agent.

25. A method of screening for a ligand, agonist or antagonist for a 14273 receptor, comprising using a 14273 receptor, or a partial peptide thereof or a salt thereof, and a compound having an aromatic ring and a group capable of releasing a cation.

26. A kit for screening for a ligand, agonist or antagonist for a 14273 receptor, comprising a 14273 receptor, or a partial peptide thereof or a salt thereof, and a compound having an aromatic ring and a group capable of releasing a cation.